

Arkema Facility - Harvey Response

Crosby, TX

Arkema Inc.

September 9, 2017

Project #109489 Summary

1.0 Introduction

As a result of flooding events related to Hurricane Harvey, the Arkema facility located in Crosby, TX suffered a loss of power and failure on refrigeration of manufacturing process. The loss of temperature control resulted in degradation and heating of organic peroxides, with the potential of creating a fire. As a precautionary measure, local authorities established a 1.5-mile radius evacuation zone around the facility.

On August 31, 2017, the Center for Toxicology and Environmental Health, LLC (CTEH®) was contacted by Arkema Inc. (Arkema) to initiate air monitoring and sampling around the community areas outside of the evacuation zone perimeter. Air monitoring in support of Worker Activity was conducted within the perimeter of the facility during facility stabilization operations. This submittal summarizes the results of real-time air monitoring conducted by CTEH® personnel from 06:00 on September 8, 2017 to 06:00 on September 9, 2017. A map of the site location is provided in **Attachment A**.

2.0 Real-time Air Monitoring

All real-time air monitoring instrumentation was calibrated per the manufacturer's recommendations prior to air monitoring. Handheld, real-time air monitoring was conducted for oxygen (O₂) and volatile organic compounds (VOCs) using RAE Systems MultiRAE instruments. Additionally, particulate matter (PM_{2.5}) was assessed using TSI SidePak AM510s. **Table 1** summarizes the data for all real-time air monitoring readings recorded in the Crosby, TX Community from 06:00 on September 8, 2017 through 06:00 on September 9, 2017 and **Table 2** summarizes the Worker Activity real-time air monitoring readings from within the site boundary for the same period. Maps of real-time air monitoring locations are provided as **Attachment B**.

Table 1 Community Real-time Handheld Air Monitoring Readings

06:00 September 8, 2017 – 06:00 September 9, 2017				
Analyte	Instrument	Number of Readings	Number of Detections	Range of Detections*
PM _{2.5}	AM510	8	8	0.020 - 0.027 mg/m ³
VOCs	MultiRAE	8	0	< 0.1 ppm

*If detections were not observed, the instrument detection limit is listed in this column.

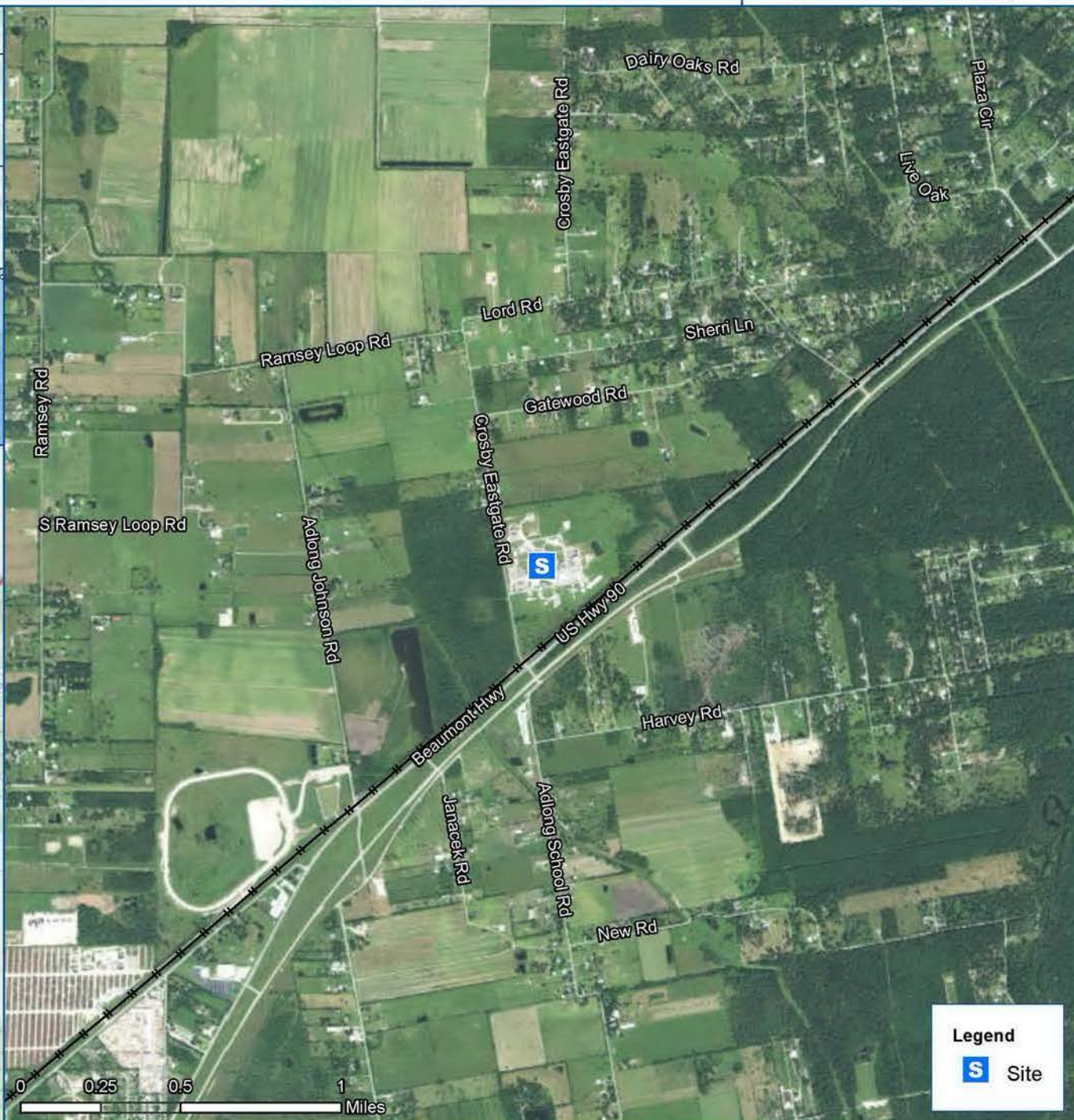
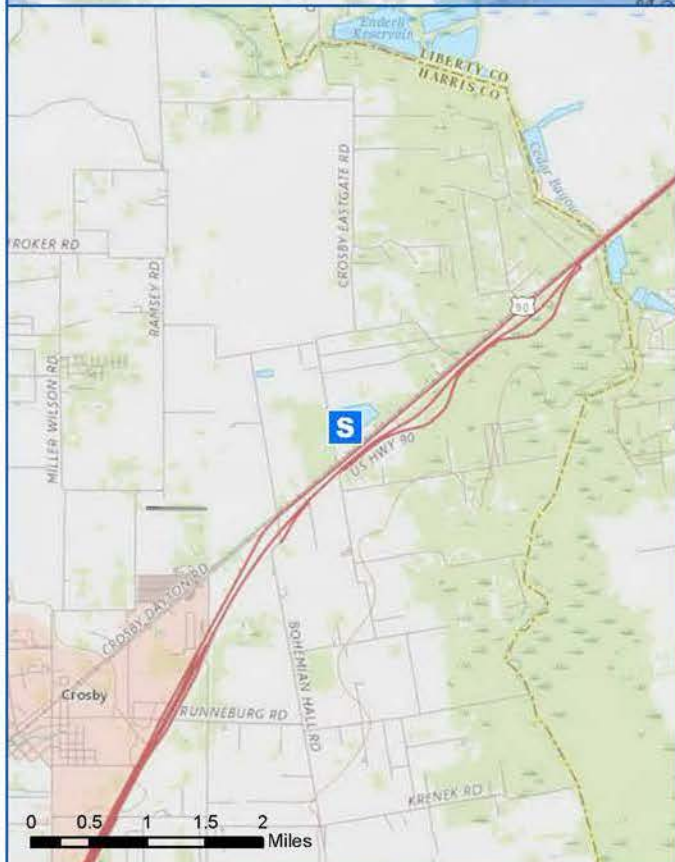
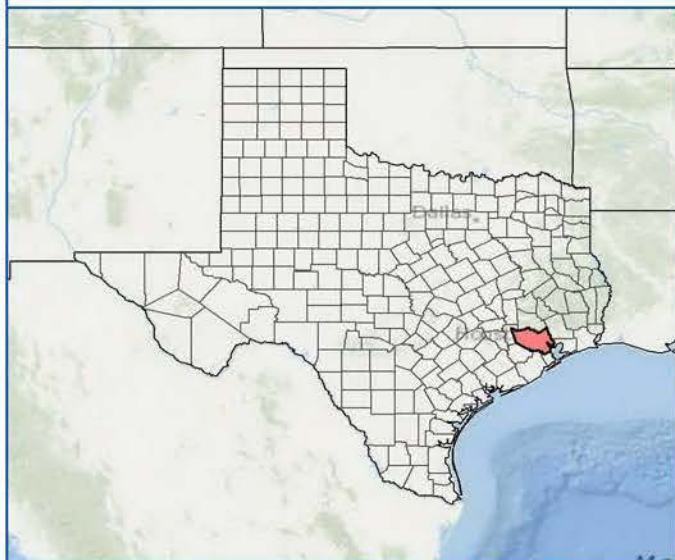
Table 2 Worker Activity Real-time Handheld Air Monitoring Readings
06:00 September 8, 2017 – 06:00 September 9, 2017

Analyte	Instrument	Number of Readings	Number of Detections	Range of Detections*
LEL	MultiRAE	1	0	< 1.0 %
O ₂	MultiRAE	13	13	20.9 %
VOCs	MultiRAE	30	5	0.7 – 1.0 ppm

*If detections were not observed, the instrument detection limit is listed in this column.

Attachment A

Site Location Map

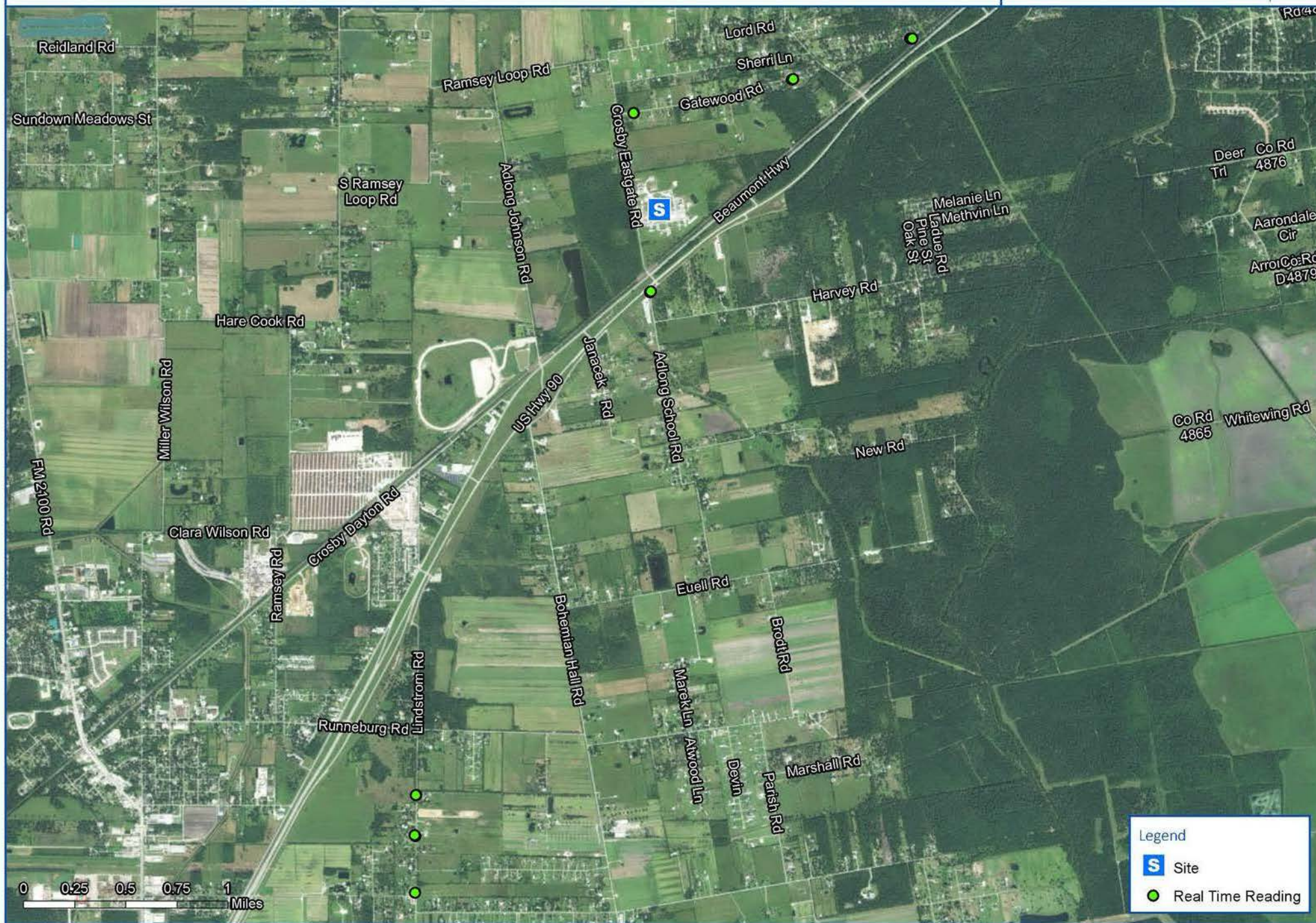


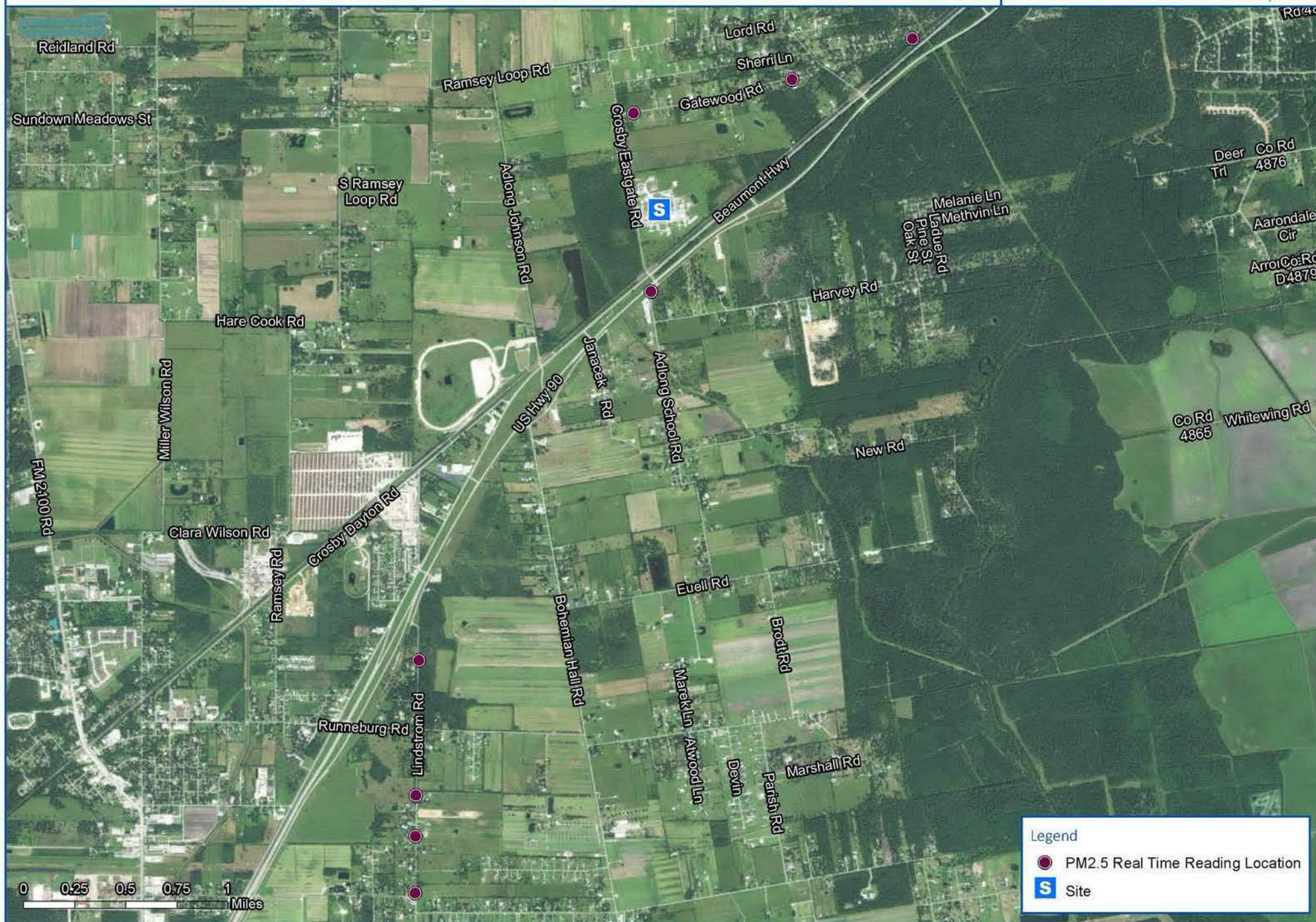
Legend

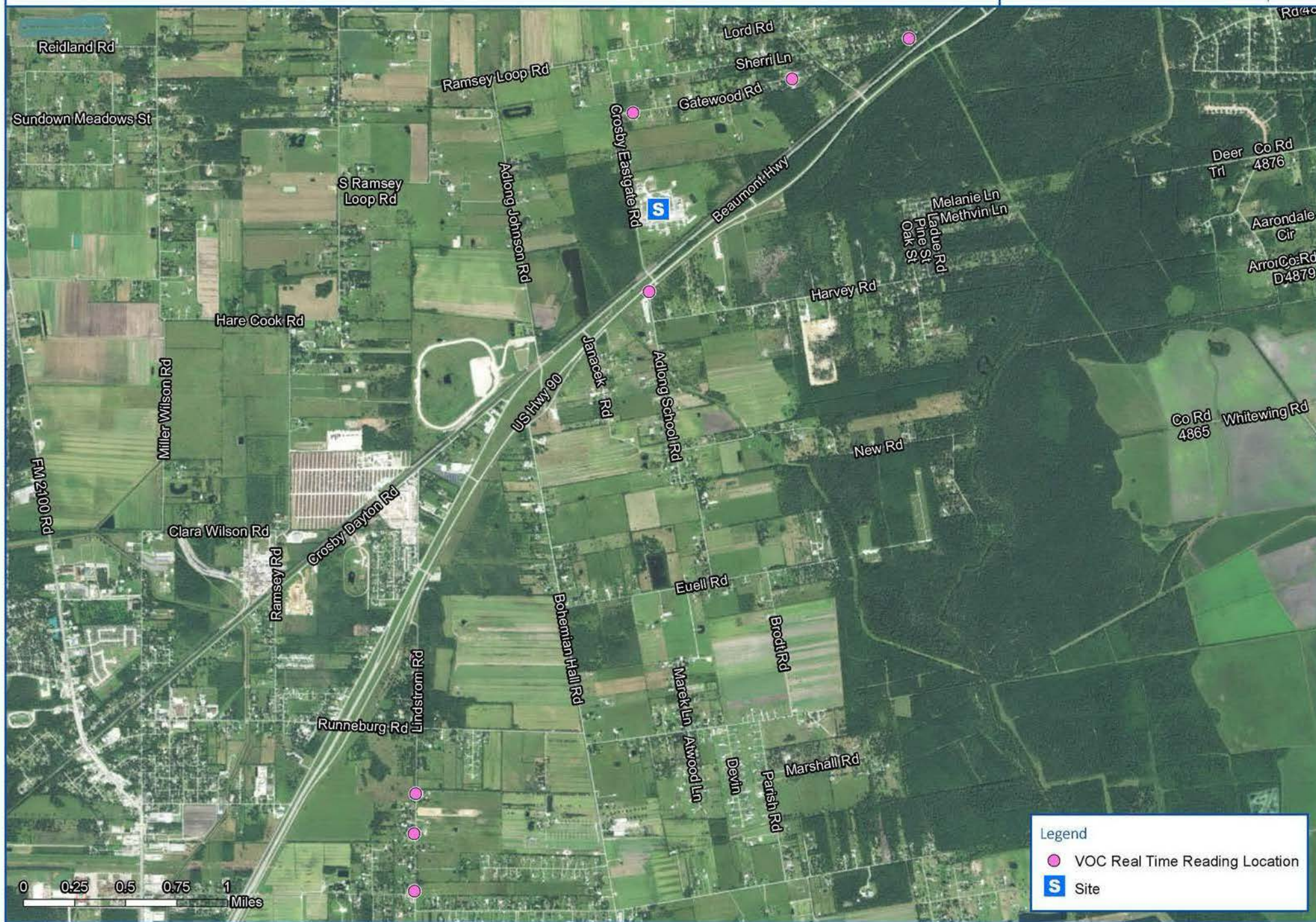
S Site

Attachment B

Handheld Real-time Air Monitoring Locations















Attachment C

KHPY Weather

(Cleveland Municipal Airport – 12.5 miles North of Site)

Baytown, TX

✈ Baytown

© 10:58 AM CDT on September 09, 2017 (GMT -0500)

Forecast **History** Calendar Rain / Snow Health

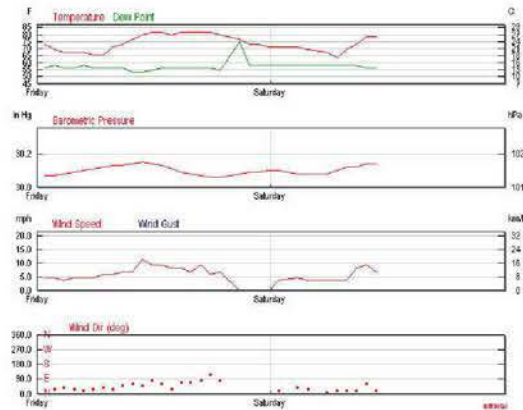
Weather History for KEFD - September, 2017

From: To:

[Get History](#)

	Daily	Weekly	Monthly	Custom		Max	Avg	Min	Sum
Temperature									
Max Temperature						82 °F	80 °F	78 °F	
Mean Temperature						74 °F	71 °F	68 °F	
Min Temperature						66 °F	65 °F	64 °F	
Degree Days									
Heating Degree Days (base 65)						0	0	0	0
Cooling Degree Days (base 65)						9	6	4	13
Growing Degree Days (base 50)						24	21	18	42
Dew Point									
Dew Point						75 °F	58 °F	54 °F	
Precipitation									
Precipitation						0.00 in	0.00 in	0.00 in	0.00 in
Snowdepth						-	-	-	-
Wind									
Wind						12 mph	4 mph	0 mph	
Gust Wind						-	-	-	
Sea Level Pressure									
Sea Level Pressure						30.15 in	30.10 in	30.06 in	

Custom Weather History Graph



Weather History & Observations

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Sep	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
8	82	74	66	75	58	54	94	56	39	30.15	30.10	30.06	10	10	10	12	5	-	0.00	
9	78	68	64	59	59	57	83	66	47	30.14	30.10	30.08	10	10	10	9	4	-	0.00	

CTEH

ARK_HCPCSD_0000105